2017[illegible]4[illegible]

[illegible]

[illegible]____________ [illegible]____________

[illegible]8[illegible]100[illegible]90[illegible]30[illegible]

[illegible]

1[illegible]

2[illegible]“[illegible]”[illegible]

3[illegible]2B[illegible]

[illegible]

4[illegible]g[illegible]10 m/s^2.

[illegible]

[illegible]I([illegible]13[illegible]3[illegible]39[illegible])

1[illegible]( )

A[illegible]kg B[illegible]J

C[illegible]C/N D[illegible]V

2[illegible]( )

A[illegible] B[illegible]

C[illegible] D[illegible]

3[illegible]( )

A[illegible]

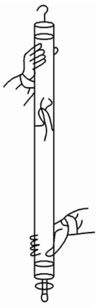
B[illegible]

C[illegible]

D[illegible]

4.[illegible]1[illegible]1.5 m[illegible]

[illegible]( )



□1

A□□□□□□□□□□□□□□□□

B□□□□□□□□□□□□□□□□□□

C□□□□□□□□□□□□□□□□

D□□□□□□□□□□□□□□□

5□□□ 2 s □□□□□

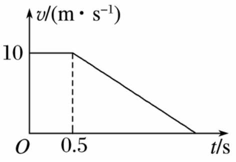
□□□□□□□□□□(　　)

A□6×10^{2} m　　B□6×10^{4} m

C□6×10^{6} m　　D□6×10^{8} m

6.□□□10 m/s □□□□□□□□□□□□□□□15 m □□□□□□□□□□□□□□□□□□□□□□

□□□□□□□0.5 s□□□□□v□t□□□2 □□□□□□□□□□(　　)



□2

A□20 m/s^{2}　　B□6 m/s^{2}

C□5 m/s^{2}　　D□4 m/s^{2}

7.□□3 □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□(　　)

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B□□□□□□□□□□□□□□□□□

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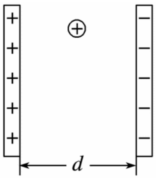
D□□□□□□□□□□□□□□□□□□□□

8.[illegible] 4 [illegible] d [illegible] E [illegible] m[illegible]q [illegible] g.[illegible]( )



[illegible] 4

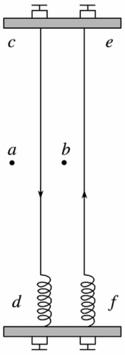
A[illegible] a[illegible]g

B[illegible] t[illegible]

C[illegible] y[illegible]

D[illegible] W[illegible]Eqd

9.[illegible] 5 [illegible] cd [illegible] ef[illegible]a[illegible]b [illegible]( )



[illegible] 5

A[illegible]b [illegible]

B[illegible]ef[illegible] a [illegible]

C[illegible]cd [illegible]

D[illegible]cd [illegible]

10.[illegible] G [illegible] 6 [illegible]

θ[illegible]( )

[illegible] 6

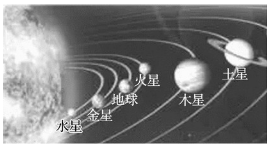
A[illegible] θ[illegible]60°[illegible]

B[illegible]θ[illegible]120°[illegible]G

C[illegible]θ[illegible]

D[illegible]θ[illegible]

11. [illegible]7[illegible]n[illegible]k[illegible]( )



[illegible]7

A[illegible]

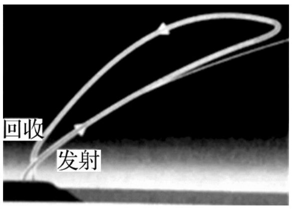
B[illegible]“[illegible]”[illegible]

C[illegible]

D[illegible]

12.[illegible]8[illegible]

[illegible]( )



[illegible]8

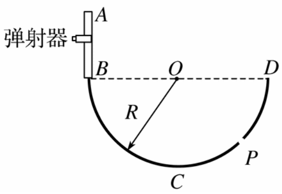
A[illegible]

B[illegible]

C[illegible]

D[illegible]

13.[illegible]9[illegible]AB[illegible]B[illegible]BCD[illegible]R[illegible]2.0 m[illegible]BD[illegible]AB[illegible]P[illegible]O[illegible]37°.[illegible]P[illegible]P[illegible]B[illegible]([illegible]g[illegible]10 m/s^2[illegible]sin 37°[illegible]0.6[illegible]cos 37°[illegible]0.8)( )



□9

A□0.15 m,4 m/s　　B□1.50 m,4 m/s

C□0.15 m,2 m/s　　D□1.50 m,2 m/s

□□□□□Ⅱ(□□□3□□□□□□2□□□6□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□2□□□□□□□□□1□□□□□□□0□)

14□□□□□□□□□□□□□□□(　　)

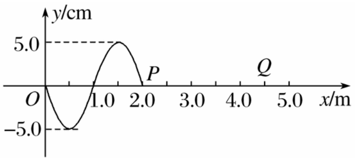
A□β□γ□□□□□□□

B□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

C□□LC□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

D□□□n□4□□□□□□□□□□□□□4□□□□□□□□

15.□□□□□□□□□□□□□□□□□□□□□□□x□2.0 m□□P□□□□□□□□□□□□□□□□10□□□t□0.9 s□□□□□□□P□□□□□□□□□□□□□□□□□□□□□(　　)



□10

A□□□□0.5 m/s

B□□1.4 s□□P□□□□□□70 cm

C□t□1.6 s□□x□4.5 m□□□□Q□□□□□□□

D□□□□□□□□□□□□□□□□□□□□□□□□2.5 Hz

16.□□□□□□11□□□□“□□□□□□□□□□□□□”□□□□□□□□S_1□S_2□□□0.80 mm□□□□□□□□□□0.80 m□□□□500 nm□□□□□□□□□□□□□□S_1□S_2□□□□□□□□□□□□□□□□□□OO'□□□1□□□□□□□□P_1□□□3□□□□□□□□P_2□□□□1□□2□□□□□□S_1□S_2□□□□□□□□□□□□□□□□□□1□□□□□□□□□□□□□□□P_1,2□□□□□□□□□□□□□□□□□P_2.□□□□□□□□□□□□□10^{-3} m/s.□□□□(　　)

□11

A□1 □□□□□□□□ 2 □□

B□□□□□□□□□□□□ 0.2 s

C□□□□□□□□□□□□ 1.0 s

D□□□□□□□□□□□□□□□□□□□□□

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□□□□□□(□□□ 7 □□□□ 55 □)

17. (5 □)□“□□□□□□”□□□(1)□ 12 □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

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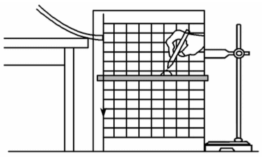

□ 12

A□□□

B□□□□□

C□□□□□

□□□□□□□□□□□□□________□(□□)

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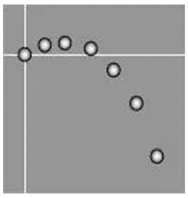
(2)□ 13 □□□ 12 □□□□□□□□□□□□□□□□□□□□□□□□□□□□________□



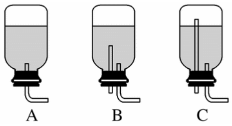
□ 13

A□□□□□□□□□□□ 0

B□□□□□□□□□□□□

C□□□□□□□□□□

(3)□ 14 □□□□□□□□□□□□□□□□□□□□□□□□________□



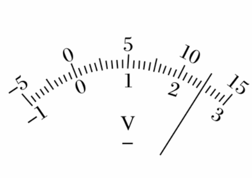
[illegible]14

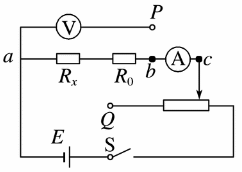
18[illegible](5[illegible])[illegible]1.00 mm[illegible]50 m([illegible]

[illegible]$1.75\times10^{[illegible]8}$ Ω·m)[illegible]

[illegible]①[illegible]3 V[illegible]3 kΩ[illegible]②[illegible]0.6 A[illegible]0.1 Ω[illegible]③[illegible]0[illegible]20 Ω[illegible]④[illegible]3 V[illegible]⑤[illegible]R_0[illegible]4.30 Ω[illegible]

[illegible]0[illegible]0.50 A[illegible]15 [illegible]________V[illegible]P[illegible]________([illegible]"[illegible]a"[illegible]"[illegible]b"[illegible]"[illegible]c"[illegible]"[illegible]")[illegible]Q[illegible]________([illegible]"[illegible]a"[illegible]"[illegible]b"[illegible]"[illegible]c"[illegible]"[illegible]")[illegible]________m.





[illegible] [illegible]

[illegible]15

19[illegible](9[illegible])[illegible]16[illegible].

[illegible]	[illegible]	[illegible]
[illegible]	0[illegible]40 s	[illegible]v_0[illegible]0[illegible]
[illegible]v[illegible]4.2 m/s		
[illegible]	40 s[illegible]640 s	v[illegible]4.2 m/s
[illegible]	640 s[illegible]720 s	[illegible]v_t[illegible]0.2 m/s

[illegible]16

(1)[illegible]a_1[illegible]x_1[illegible]

(2)[illegible]M[illegible]8 000 kg[illegible]F[illegible]

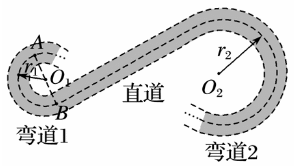
(3)[illegible]

20. (12 □)□ 17 □□□□□□“S”□□□□□□□□□□□□□□□ 1□□□ 2 □□□□□□□□□□□□□□□□□□□□□□

O_1□O_2□□□□□□□□□□□ r_1□10 m□r_2□20 m□□□ 2 □□□ 1 □ h□12 m□□□□□□□□□□□□□□□□□□ m

□1 200 kg □□□□□□□□□□□□□□□□□□□□□□□□□□□□□ 1.25 □□□□□□□□□□□□□□(sin

37°□0.6□sin 53°□0.8□g□10 m/s^2)



□17

(1)□□□□□□ 1 □□□□□□□□□□□□ v_1□

(2)□□□ v_1 □□□□□□ P□30 kW □□□□□□□□□□ t□8.0 s □□□□ 2□□□□□□□□□□□ 2 □□□□□□□□□

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(3)□□□□□ 1 □ A □□□□□□□□□□□□ B □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ d□10

m□□□□□□□(A□B □□□□□□□□□□□□□□□□□□□□□□□□□□□)□

21□(4 □)□□□□□(1)□□□“□□□□□□□□□□□□□□□□□□□□□□□□”□□□□□□□□□□□□______(□□)□

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□□□ n_a□60 □□ n_b□120 □□□□□□□□□□□□□□□□.

U_a/V	1.80	2.80	3.80	4.90
U_b/V	4.00	6.01	8.02	9.98

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(2)□□□18□□□□□□“□□□□□□□□□□□□”□□

□□□□□□________(□“a□b”□“b□a”)□□□□□□□□□□□□□□□□□□□□□□□□□□i□□□t□□□□□□□□□___

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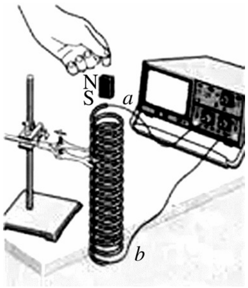
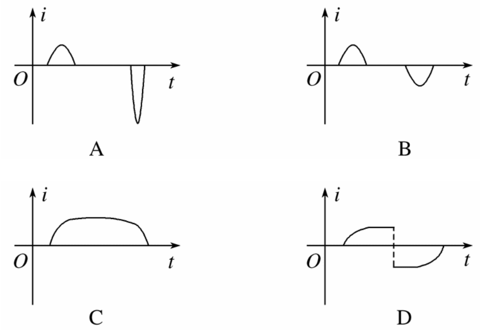


□18



22□(10□)□□□□□□□□l□□□□□□□□□□□□□□□□□□□□□□□□□□□19□□□□□θ□□□□□□□□B_1□

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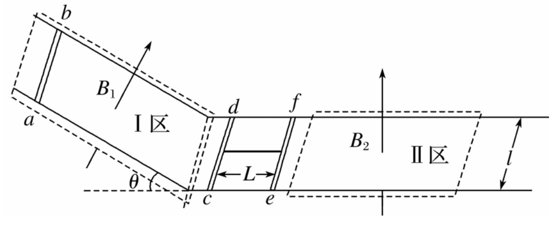
ef□□□□□L□□□□□□□□□□□)□□“□□□□”□□□□□□□B_2□□□□□□□□□□□□□□□□□□□□□Ⅱ□□□□□□L.□□□

m□□□l□□□□ab□□□□□□□□□□□□□□□□□□□□□□□(□□□□□)□□ab□“□□□□”□□□□□□□□ab□cd

□□□□□□“□□□□”□“□□□□”□□□□□□□□□□□□□□Ⅱ□□□□□□□□□□□□□□ab□cd□ef□□□□□□□□□□□□

□□□□□□□□□□□ab□cd□ef□□□□R□0.02 Ω□m□0.1 kg□l□0.5 m□L□0.3 m□θ□30°□B_1

□0.1 T□B_2□0.2 T□□□□□□□□□□□□□□□□□□□□□□□□□□



□19

(1)□ab□□□□□□□□□□□□□□□□□v_0□

(2)“□□□□”□□□□□Ⅱ□□□□□□v□

(3)“□□□□”□□□□□Ⅱ□□□□□□Q.

23□(10 □)□□□□□□□ 20 □□□□ xOy □□□□□□□□□□□□□□□□ x □□□□□□□□□ N □□□□□ v □□□□□□

□□ $2b$□□ y □□□□□□□□□□ x □□□□□□□□□□□□ x □□□□□□□□□ R□□□□□□□ O □□□□□□□□□□□□□

□□□ xOy □□□□□□□□□□□□□□□□ P □□□□□□□□□□□□□□□□□□□ x □□□□□□□ K□ A□□□ K□□ P

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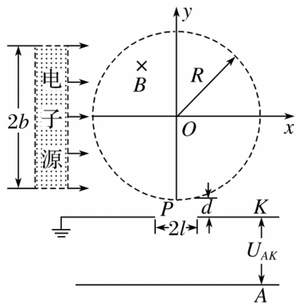
□ A □□□□□□□□□□□□□□□□□□□□□□ b□R□d□l□□□□□□ m□□□□□ e□□□□□□□□□□□



□20

(1)□□□□□□ B □□□□

(2)□□□□□ P □□□□□□ y □□□□□□ θ □□□□

(3)□ U_{AK}□0 □□□□□□□□ K□□□□□□□□ A □□□□□

(4)□□□□ i □ U_{AK}□□□□□□□□

□□□□□□

1□□□□□D

□□□□□□□□□□□N□□□□□□□□□W□□□□□□□□□□□N/C□□□□□□□□□V□□□□□□□□D.

2□□□□□B

□□B.

3□□□□□A

□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□A □□□□□□□□□□□□□□□□□□□□□□□□□

B □□□□□□□□□□□□□□□□□□□□□□□C □□□□□□□□□□□□□□□□□□D □□□

4.□□□□C

□□□C □□□

5□□□□□A

□□□□□□□□□340 m/s□□□□□□□□□□□□□□680 m□□□A □□□

6.□□□□C

□□□□□ v□t □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ t□□x□t□□15 m□10×0.5 m□t□

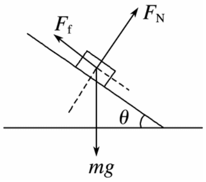
□□□□□□□□□□□2 s□□□□□□□□□□□□□□□a□□ m/s^2□5 m/s^2□□□C □□□

7.□□□□C

□□□A □□□□□□□□□□□□

□□□□□B □□□□□□□□F_N□mgcos θ□F_f□mgsin θ□□□□□□□□□□□F_N□□□□□□□□□□□C □□□□

□□□□□□□□□□□□□□□□□□□□□□□□□□□□□D □□□



8.□□□□B

□□□□□□□□□□□□□□□□□□a□□□□A □□□□□□□□□□□□□□□□□□□□□□□□□t□□□t^2□□□t□ □□□B

□□□□□□□h□gt^2□□□□C □□□□□□□□W□□□□D □□□

9.□□□□D

□□□□□□□□□□□□b □□□□□□□□□□□□□□□□□□□□□□A □□□ef□a □□□□□□□□□□□□□□□□□B □

□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ C □□□□□□□□□□□□□□□□□□□□□□□□□

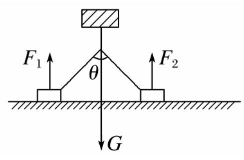
□□□□□□□□□□ D □□□

10.□□□□A

□□□□

□□□□□□□□□□ θ □□□F_1□F_2□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ A □□□B □□□□□□□□□□□□

□□□□□□□□□□□□□C □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□D □□□



11. □□□□B

□□□□□□□g□□□□□□□□□A □□□□ v□□□□□□□□□B □□□□ a□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

□□□□□□□□□□□□□C□D □□□

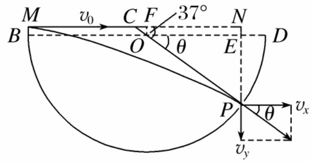
12.□□□□D

□□A □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

□□□□B □□□□□□□□□□□□□□□□□□□□□C □□D □□□

13.□□□□A

□□□□



□□□□□OE□OP·cos 37°□1.6 m

PE□OPsin 37°□1.2 m

x□MN□BO□OE□3.6 m

□ v_0t□3.6 m

OF□PN□1.2□y□1.2

CF□□OE□□1.6

□□tan 37°□□□ y□x□×3.6 m□1.35 m

□□ MB□y□PE□(1.35□1.2)m□0.15 m□B□D □□

□tan 37°

□

v_0t□3.6 m

□□ v_0□4 m

□□□□□□□A □□□

14□□□□□BC

□□□□LC □□□C □□□β □

□□□□□□□□□□□□□□□□□□□□□□□A □□n□4 □□□□□□□□□□□□C□6 □□□□□□□□□□□□D □□

15.□□□□BCD

□□□□□□□□□□□□□□□□□□□□□□□□□□P□□□□□□□□□□(2□)T□0.9 s□T□0.4 s□□□□□ v□□5 m/s□□□

A □□□□□1.4 s □□□3.5 □□□□□□□□□□□□□20 cm□□□B □□□Q□□□□□□□□□□□□ t□ s□0.8 s□□□□

□□□□□□□□ t□0.8 s□2×0.4 s□1.6 s □ Q□□□□□□□□□□□C □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

□□□□□2.5 Hz□□□D □□□

16.□□□□AB

17.□□□□(1)B　BD　(2)C　(3)B

□□□□(1)□□□

□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□A □□□□□□□□□□□□□□□□□□□□□□□□□B □□□□□C □□y□□

□□□□□□□□□□□□□□□□□□□□□□□□D □□□

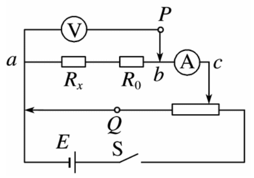
(2)□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□C.

(3)□□

□B.

18□□□□□2.50　□b　□a　31.4

□□□□□□□□3 V□□□□□□□□□□□□2.50 V□□□□□□□□□□□□□□□□□□□□□□□□□



□□ R_x□R_0□□R_x□ρ□S□□

□□□□ L□31.4 m.

19□□□□□□□□

□□□□ (1)a_1□□ m/s^2□0.105 m/s^2.

x_1□Δt_1□2.1×40 m□84 m.

(2)□□□□□□□□□□□□□□□□□□a_2□□

a_2□□ m/s^2□0.05 m/s^2.

F□Ma_2□400 N.

(3)x_2□$v\Delta t_2$□4.2×600 m□2 520 m.

x_3□·Δt_3□176 m.

x□x_1□x_2□x_3□2 780 m.

□□□≈3.86 m/s.

20. □□□□□□□

□□□□(1)kmg□

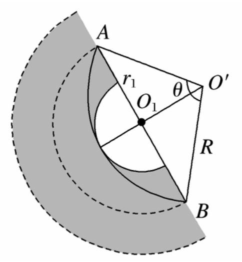
□□ v_1□□5 m/s≈11.2 m/s.

(2)kmg□m

□□ v_2□□5 m/s≈15.8 m/s.

Pt□mgh□W□□mv□mv.

□□ W□□□21 000 J.



(3)□□□□□□ v □□(□ R □□)□ s □□□□□□□□□□ A□B □□□□□□□□□□□□□□□

R^2□r□[R□(r_1□)]^2

□□ R□12.5 m□

v_m□□12.5 m/s□

sin □□□□□ θ□106°□

□□ t_{min}□□ s□ s≈1.85 s.

21□□□□□(1)ACE　n_b　(2)b□a　A

□□□□(1)□□□

□□□□A□C□E□

□□□□□□□□□□□□□□□□□□□□□□ n_b □□□□□

(2)□□□□□□□□□□□□□□□□□ b □ a□□□□□□□□□□□□□□□□□□C □□□□□□□□□□□□□□□□□□

□□□□□□□□□□□□□□□A □□□□□B□D □□□

22□□□□□ □□□

□□□□(1)□□□□□mgsin θ□

□□□v_0□6 m/s.

(2)□□□□□□□□ mv_0□4mv□□□ v□□1.5 m/s.

(3)□“□□□□”□□□□□□‖□□□□□□□□□□ Δv□□□□□□□ $B_2l\Delta t$□4$m\Delta v$

□□□□□ Δv□0.25 m/s.

□“□□□□”□□□□□□‖□□□□□□□□□□ Δv'□□□□ $B_2'l\Delta t'$□4$m\Delta v'$□′□

□□ Δv'□0.25 m/s.

□□“□□□□”□□□□□□‖□□□□□ v'□v□Δv□Δv'□1 m/s.

□□□□□□□Q□·4m(v^2□v'^2)□0.25 J.

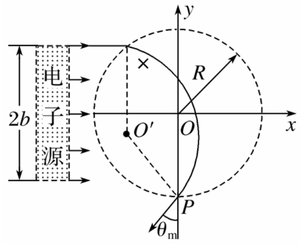
23□□□□□□□□

□□□□(1)□□□□□□□□□□□□□□□□□□□□evB□□

r□R□□□□B□.

(2)□□□□□□□□□□□□ P □□□□□□ y □□□□□□□ θ_m□□□□□□□□□ sin θ_m□□□□ θ_m□60°.

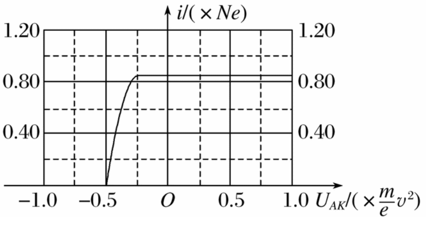
□□□□□□□□□□□□□ P □□□□□□ y □□□□□□ θ_m'□□ 60°□□□□□□□□□□□ θ □□□□□60°≤θ≤60°



(3)□□□□□□□□□□ P □□□ y □□□□□□□ α□□tan α□□□□ α□45°□y'□Rsin α□R.

□□□□□□□ K □□□□□□□□ A □□□□□ n□□□□□≈0.82

□□ n□0.82N.

(4)□□□□□□□□□□□□ U_c□□mv^2□□□ y □□ 45°□□□□□□□□□□□□□ A □□□□□□□□□□□□□□□□□□□□□□□□

□□□□□□□□□ U'□□mv^2□□□(3)□□□□□□□□ i_{max}□0.82Ne.